

✓
Replacement paragraph at page 5, lines 20 - 21 (clean version):

A¹ FIGS. 6A to 6C show various functions that may be included in a system according to a second embodiment.

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Replacement paragraph at page 13, line 22 – page 14, line 7 (clean version):

A² A metadata service 404 may interact with a gateway service 402 to service metadata related requests. In addition, a metadata service 404 may interact with the bitfile storage service 406 to handle its storage needs. As is well known in the art, metadata may include predetermined information on files contained in the storage system 400. A metadata service 404 may be conceptualized as being de-coupled from the other services as metadata requests can be serviced as independent operations without any coupling. One example of a system that may be included in a metadata service is disclosed in a commonly-owned co-pending U.S. patent application serial number 09/659,107, entitled STORAGE SYSTEM HAVING PARTITIONED MIGRATABLE METADATA filed on September 11, 2000 by Nowicki (referred to hereinafter as Nowicki).

✓
Replacement paragraph at page 15, lines 4 – 10 (clean version):

A³ In the example of FIG. 4, a gateway service 402 may include a number of gateway servers 408-0 to 408-i, where i is an arbitrary number. A gateway server (408-0 to 408-i) may host one or more client applications for accessing files in the storage system 400. Hosted applications are shown in FIG. 4 as items 410-0 to 410-i. A hosted application (410-0 to 410-i) may have a corresponding interface 412-0 to 412-i that can enable interaction between a hosted application and other system services, as will be described in more detail below.

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Replacement paragraph at page 15, lines 11 – 13 (clean version):

A⁴
Gateway servers (408-0 to 408-i) may be de-coupled from one another as described in conjunction with FIG. 1. For example, each gateway server (408-0 to 408-i) may service requests as independent operations without any coupling.

✓
Replacement paragraph at page 15, lines 14 – 22 (clean version):

A⁵
As shown in FIG. 4, a metadata service 404 may include a number of metadata servers 414-0 to 414-j, where j is an arbitrary number. A metadata server (414-0 to 414-j) may include a metadata application that can access metadata for an internal client for example and without limitation, a gateway server. The metadata accesses are according to external client requests. Such accesses may vary according to a particular metadata attribute (e.g., file system). Metadata server applications are shown as items 416-0 to 416-j. A metadata server application (416-0 to 416-j) may have a corresponding interface 418-0 to 418-j. A metadata application interface (418-0 to 418-j) can enable interaction between a metadata application and other system services, as will be described in more detail below.

✓
Replacement paragraph at page 15, line 23 – page 16, line 6 (clean version):

A⁶
Like the gateway servers (408-0 to 408-i), metadata servers (414-0 to 414-j) may be de-coupled from one another. In the example of FIG. 4, metadata servers (414-0 to 414-j) can access metadata stored on metadata storage media 420. It is understood that each metadata server (414-0 to 414-j) can include a physical connection to metadata storage media 420. The physical connection can include for example and without limitation a network, fibre channel, or a connection customarily found in direct-attached storage systems, NAS, or SAN systems.

Replacement paragraph at page 16, lines 7 – 15 (clean version):

A⁷ Referring once again to FIG. 4, a bitfile storage service 406 may include a number of storage servers 422-0 to 422-k, where k is an arbitrary number. A storage server (422-0 to 422-k) may include one or more storage server applications (424-0 to 424-k) that can access files for an internal client, for example and without limitation n, a gateway server. The file accesses are according to external client requests. Such accesses may include, without limitation, read, writes, file creation, file deletion and/or file archiving. Storage server interfaces 426-0 to 426-k may be provided that correspond to storage server applications (424-0 to 424-k). Storage server interfaces (426-0 to 426-k) may enable interaction between a storage server application and other system services, as will be described in more detail below.

Replacement paragraph at page 16, lines 16 – 20 (clean version):

A⁸ Like the servers of the other services (402 and 404), storage servers (422-0 to 422-k) may be de-coupled from one another. Each storage server (422-0 to 422-k) may have access to bitfile storage media 428 by way of some physical connection. The physical connection can include for example and without limitation a network, fibre channel, or a connection customarily found in direct-attached storage systems, NAS, or SAN systems.

Replacement paragraph at page 16, lines 21 – page 17, line 4 (clean version):

A⁹ A storage system 400 according to a second embodiment may further include one or more request routing servers 430a and 430b. A request routing server (430a and 430b) may include server directories 432a and 432b. A server directory (432a and 432b) may be queried to receive the location of a server that can service a given request. In one particular arrangement, a server directory (432a and 432b) may be queried by a gateway interface (412-0 to 412-i) in response to an external client request. A server directory (432a and 432b) may then return the location(s) of one or more servers that can service a request.

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Replacement paragraph at page 17, lines 17 – 19 (clean version):

A¹⁰
In alternate arrangements, gateway servers (408-0 to 408-i) may each cache all or a portion of a server directory. In such cases, queries to find an available/appropriate server for a given request may include a process internal to a gateway server.

✓
Replacement paragraph at page 21, lines 18 - 22 (clean version):

A¹¹
A gateway server interface may include a Gateway_Server_Request function. A Gateway_Server_Request function may receive a request for a gateway service from, for example and not limiting, a storage server. The results of a request may then be output.

✓
Replacement paragraph at page 21, line 23 – page 22, line 6 (clean version):

A¹²
A Metadata_Request function may receive a request for a particular metadata service from a gateway server. Such a request may then be serviced. The results of a request may then be output. A more detailed discussion of the various functions of a metadata server is disclosed in the previously-referenced, co-pending patent application of *Nowicki*.

✓
Replacement paragraph at page 22, lines 7 – 10 (clean version):

A¹³
A Storage_Server_Request function may receive a request for a particular service from a gateway server. The results of a request may then be output.

It is respectfully asserted that the foregoing amendments place the application in better condition for examination, and that none of the foregoing changes contain any new matter.

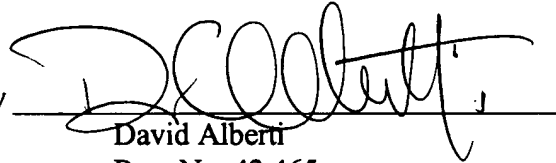
The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 07-1896.

Respectfully submitted,

GRAY CARY WARE & FREIDENRICH LLP

Dated: June 28, 2002

By

A handwritten signature in black ink, appearing to read "D. Alberti", is written over a horizontal line.

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